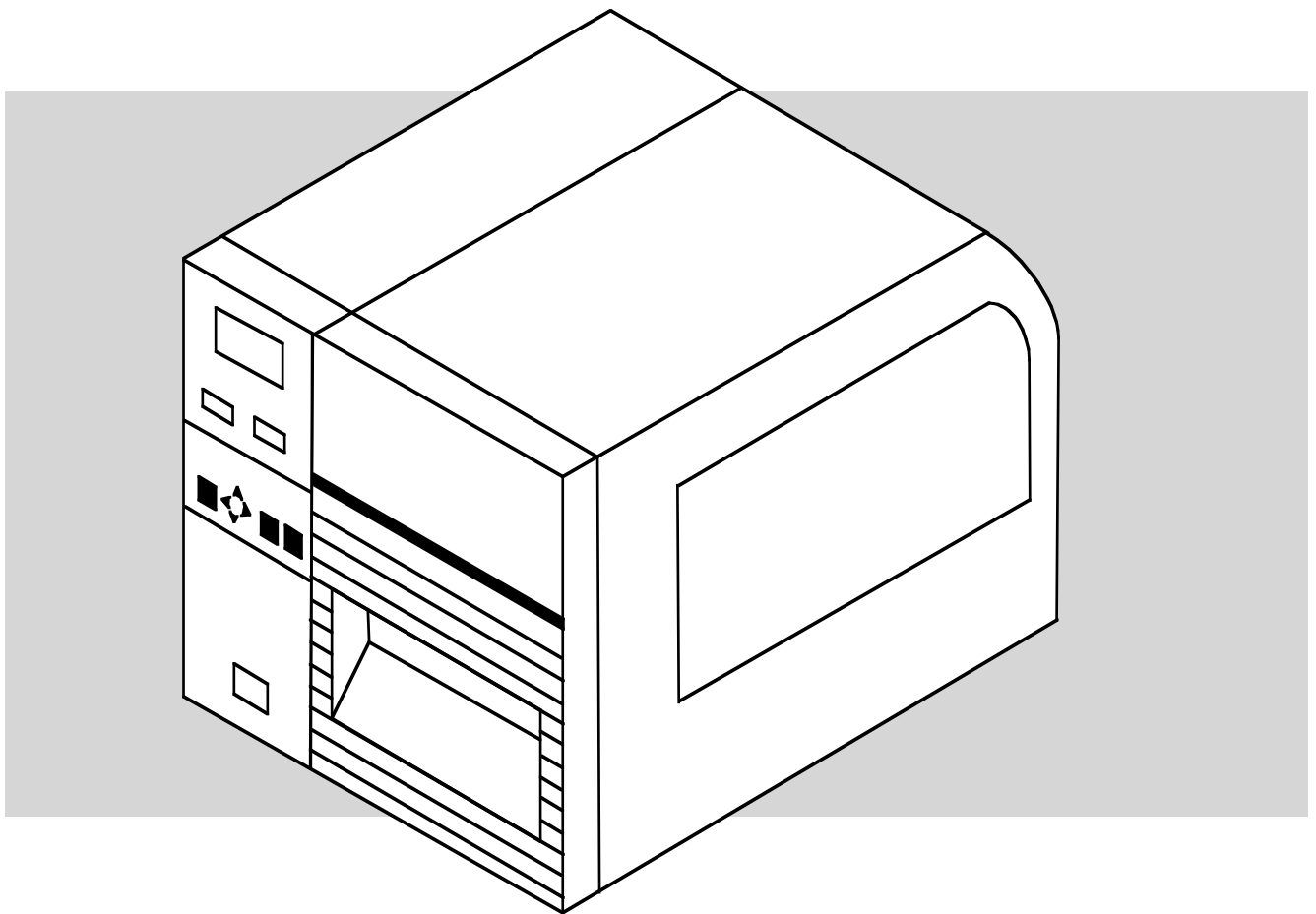




**DCS & Labelling Worldwide**

# **Quick Start Guide**

## ***GL408e / GL412e Barcode Thermal Printer***



**Read this Quick Start manual before beginning.**

**For the best printing results, we recommend the use of SATO genuine labels and ribbons.**

**Contact your SATO representative for further details.**

Extensive contact information of worldwide SATO operations can be found on the Internet at **[www.satoworldwide.com](http://www.satoworldwide.com)**

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# 1 General

## 1.1 Important information

This quick guide provides important information on how to setup your new SATO product.

Be sure to read this quick guide thoroughly before using this printer. It is an integral part of the product and should be kept in the immediate vicinity of the device and available to the operating staff.

## 1.2 Limitation of liability

All information in this manual have been compiled under due consideration of federal standards and regulations.

The manufacturer will not be held liable for damage resulting from:

- Disregarding these instructions
- Unintended use of the printer
- Unauthorized technical modifications
- Use of unapproved spare parts
- Use of unapproved consumables

### **FCC WARNING**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### **NOTICE**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

## 1.3 Copyright

All text, images, logos and information contained within this manual are the intellectual property of SATO Corporation and are protected under worldwide patent and registration law. SATO Corporation or any of its Group Member Companies retain the right to modify, update, correct or delete this information or sections, at any time with or without notice and shall not be liable for any damages of any kind arising from the use of this material.

This material may not be used or reproduced without the written permission of SATO Corporation. © SATO Corporation 2007

## 1.4 Explanation of symbols

This instruction manual uses various warning icons to help you understand the safe operation of your printer. Explanations of the icons are below.



### **WARNING!**

Indicates neglectful or erroneous use may cause irreparable damage to the product, serious injury to the operator, or worse.



### **CAUTION!**

Indicates a specific point where caution should be used. The graphic within the triangle will indicate the specific issue, i.e.; the sign on the left indicates a caution for potential electrical shock.



### **CAUTION!**

**Indicates a potentially hazardous situation which, if not avoided, may result in damage to your product or host equipment.**



### **NOTE!**

Emphasizes useful tips or recommendations for efficient and smooth operation of your printer.

## 2 Safety

This paragraph provides you with an overview of the important safety aspects associated with the operation of your printer.

Disregarding the operating instructions and safety regulations specified in this manual may result in considerable damage to your printer and endanger the operator.

### 2.1 Intended use

The printer should only be used for printing on materials recommended by the manufacturer.



#### **WARNING!**

##### **Danger when device is used inappropriately!**

Any use for purposes exceeding and/or deviating from the intended use of the device must be avoided.

Therefore, use the device only for its intended purpose and strictly adhere to all information provided in this manual.

No liability shall be assumed for any claims arising from damages resulting from the inappropriate use of this printer or its accessory's.

Damages resulting from inappropriate use shall be the sole responsibility of the operator.



#### **CAUTION!**

Do not disassemble the printer or alter its components in any way.

Never attempt to service any internal component of your printer. Attempting such will void your warranty and may cause serious personal injury.

## 2.2 Operating Tips

Your new SATO Printer is the latest in printing technology and must be cared for as any other electronic product. It is a very durable and dependable piece of equipment, but we suggest you follow a few common rules when installing or using your printer.

- Do not operate in unstable locations such as an unsteady, slanted or extreme vibrating table. It may cause the equipment to shift from its desired location.
- Do not operate or store the printer in applications where high humidity with extreme condensation are prevalent. Be sure to follow the printer's environment operation requirements as defined in the later in this Quick Guide. Failure to follow these operating instructions may damage your printer and void your warranty.
- When moving the printer from a location, be sure to avoid potential shock or damage to your printer and its cabling by first powering off the printer, then unplug the printer from its power receptacle and disconnect the communication cable (if non-wireless).
- Do not insert or drop anything metallic or flammable into the openings of the printer, i.e.; cable outlet, vents or mounting hole of the memory cartridge.
- In the event that a foreign object should accidentally fall inside the printer, immediately turn off the power, unplug the printer from the power receptacle and contact your SATO dealer or service center before continuing to use your printer. Using your printer under such conditions may cause fire or electrical shock.
- Do not move or ship the printer with the media loaded inside. This will avoid damaging the components of your printer.
- The printer is heavy. If possible, seek assistance when attempting to move the printer from one location to another.
- We highly recommend allocating the printer to its own dedicated power outlet and source line. This avoids having the printer consuming power from the same source as another electric appliance which may consume power at various levels and creating a fluctuating power supply. Power surges may negatively impact your printer's performance and longevity.
- Avoid operating in direct sunlight as this product contains optical sensors. Prolonged direct sunlight may damage these sensors and cause erroneous operation. Ensure the printer cover is closed when operating.



**Electrical**

**DANGER!**

To avoid possible electrical shock, do not operate the power switch or handle the power cable with a wet hand.  
Keep the power cable away from open flame or excessive heat.  
When disconnecting the power cable from its receptacle be sure to pull at the plugs receptacle end to avoid damaging the cable or exposing the operator to possible electrical shock.

**Cutter**

**CAUTION!**

Risk of injury.  
Keep fingers and foreign objects away from the blade of the cutter.  
Inserting anything other than the intended media could result in serious personal injury or damage to the cutter assembly.

## 3 Transport and storage

### 3.1 Transport information

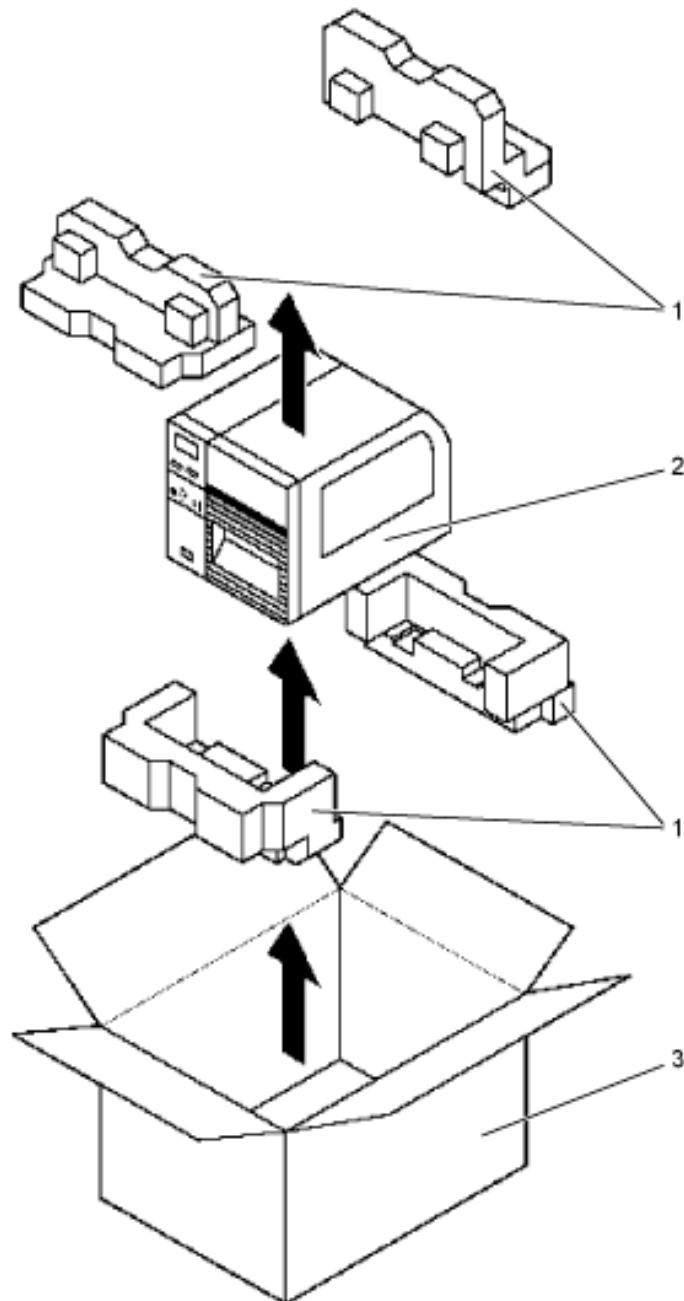
- Unplug the power cable from the printer before transporting it along with the printer.
- Ensure you have removed all ribbons and media from the inside of your printer. If you must transport these with your printer, do so separately to avoid damaging the printer.

### 3.2 Storage

- When storing the printer for an extended period of time, protect it against influences such extreme temperatures changes, direct sun exposure, and high levels of moisture.

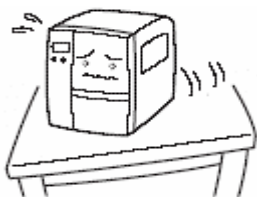
## 4 Unpacking the printer

Unpack the printer and check the contents against this display.



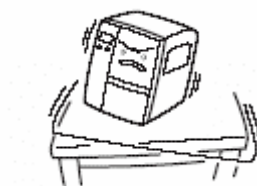
- 1 Cushion
- 2 Printer
- 3 Box

## 5 Installation



### Place the printer in a level place

If installed in a rough or slanting place, quality printing will not be available. It may cause malfunction and shorten the life of the printer.



### Use a stable platform

Use a stable platform. Do not carry the printer with the media inside. Do not rock the printer.



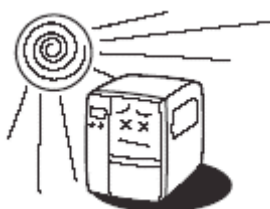
### Avoid high heat and humidity

Do not install in a place of high temperature or humidity. High temperature or humidity may cause malfunction.



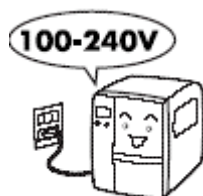
### Avoid dust

Dust may deteriorate the quality of printing. It may cause malfunction and shorten the life of the printer.



### Avoid direct sunlight

Since this product is provided with optical sensors. Direct sunlight may cause erroneous operation. Ensure that the cover is closed when printing.



### Use a dedicated AC outlet

We highly recommend the printer having its own dedicated power outlet and source line. This will avoid having the printer in-line consuming power from the same source as another electric appliance which may consume power at various levels and thereby create power surges which may negatively impact your printer's performance and longevity.

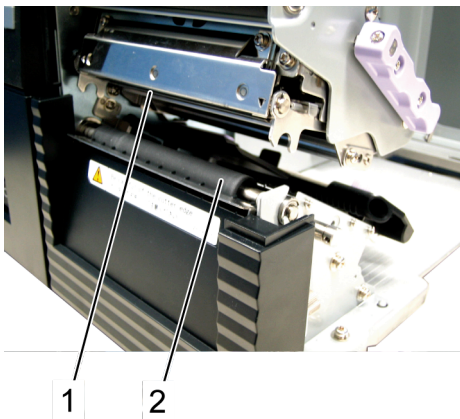
## 6 Overview

### 6.1 Parts and functions



- 1 Power switch (ON / OFF)
- 2 Operation panel (display, buttons, LED)
- 3 Front cover
- 4 Media cover

Fig. 1 Printer main body, front



- 1 Print head (consumable item)
- 2 Platen roller (consumable item)

Fig. 2 Print head

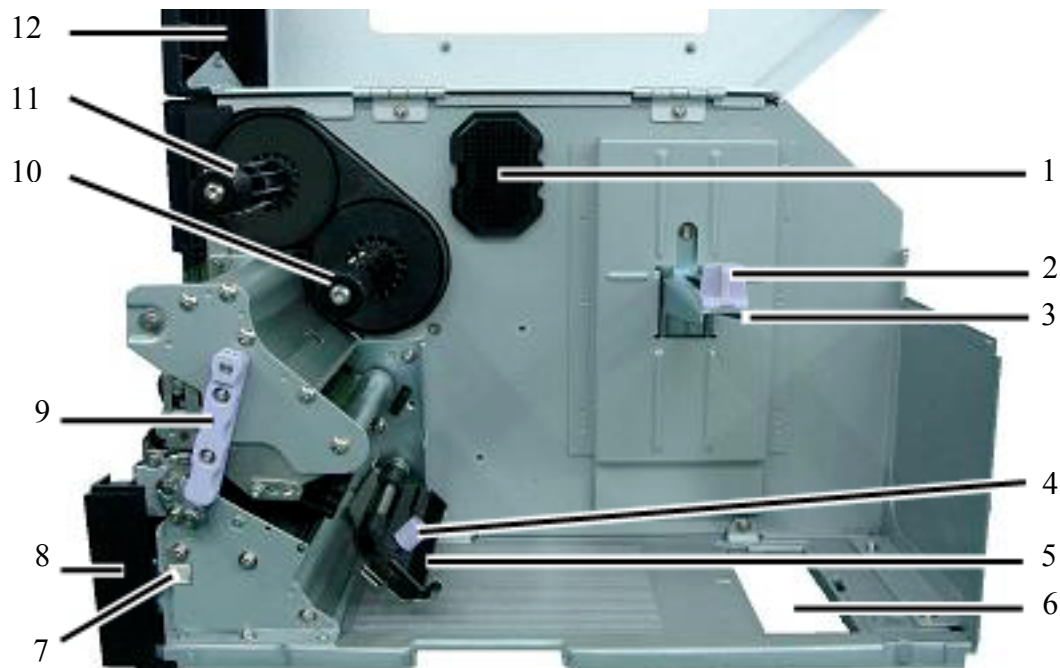


Fig. 3 Printer main body, side

- |   |                                   |    |                             |
|---|-----------------------------------|----|-----------------------------|
| 1 | Memory cartridge slot             | 7  | Stopper screw               |
| 2 | Roll guide                        | 8  | Front cover                 |
| 3 | Roll paper feeder                 | 9  | Print head open/close latch |
| 4 | Media guide knob                  | 10 | Ribbon feed spindle         |
| 5 | Label damper                      | 11 | Ribbon take-up spindle      |
| 6 | Bottom opening for fan-fold media | 12 | Media cover                 |



Fig. 4 Printer main body, back

- |   |                                   |
|---|-----------------------------------|
| 1 | Opening for fan-fold media        |
| 2 | EXT connector (optional)          |
| 3 | LAN / W-LAN card slot (optional)  |
| 4 | IEEE1284 interface connector      |
| 5 | USB interface connector           |
| 6 | RS232C interface connector        |
| 7 | AC input (power supply connector) |
| 8 | Cable hook                        |



Fig. 5 Operation panel

- 1 **LED:**  
POWER (lights up when the power is on)  
ONLINE (lights up when communication is available, flashes when communication fails)  
STATUS (lights up and flashes when an error occurs, flashes when the printer is sending/receiving data)  
LABEL (lights up and flashes when a paper error occurs)  
RIBBON (lights up and flashes when a ribbon error occurs)
- 2 **Display**  
Back lighted LCD display icons, operation and error messages.
- 3 **LINE** button  
Toggles the printer between ONLINE and OFFLINE modes.
- 4 **FEED** button  
Advances the media one label length in ONLINE and OFFLINE mode. If there is data in the printer, the printer will print the data before ejecting the label.  
Use this button to line up the label to a proper print position.
- 5 **CANCEL** button  
Cancels printing data. In each setting mode, you can return to the previous setting item.
- 6 **ENTER** button  
Confirms the choice of a selection or value and advances the setting menus.
- 7 **Direction keys**  
These keys move cursor only when the printer is OFFLINE. While you are in setting menu, you can enter numbers by incrementing / decrementing and move cursor to wished parameter section.
- 8 **FUNCTION** button  
With each setting mode, you can return to the mode selection screen.

## 7 Setup and initial operation

### 7.1 Connecting the device

#### 7.1.1 Connecting the interface cable

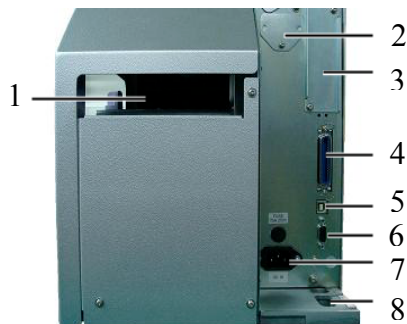
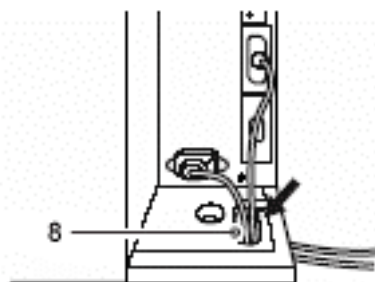


Fig. 6 Printer main body, back

1. Connect the interface cable to the interface connector (4, 5, 6) on the printer and to your PC.
2. Lead the interface cable through the cable hook (8) on the printer.

#### 7.1.2 Turning on the device



1. Connect the power cable to the power supply connector (7) on the printer and to your power outlet.
2. Lead the power cable through the cable hook (8) on the printer.



**Note!**

Use only the power cable included with your printer.

3. Press the POWER button on "I". The LED "POWER" lights up.

#### 7.1.3 Turning off the device

4. Before turning off the printer, make sure that the printer is OFFLINE.  
If the printer is ONLINE, press the LINE button. "OFFLINE" will be displayed.
5. Press the POWER button on "0".

#### 7.1.4 Removing the power cable

1. Before removing the power cable, make sure to turn off the printer by pressing the POWER button.



2. Now, pull the power cable from the power outlet.
3. Remove the power cable out of the hook and pull the power cable from the printer.

## 7.2 Inserting media

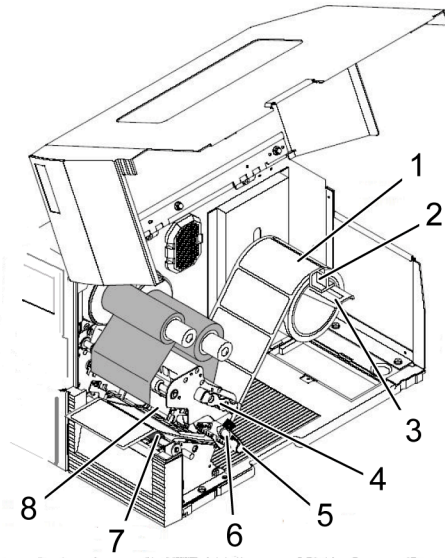


Fig. 7 Inserting media, printer

1. Open the media cover.
2. Install the media roll (1) on the roll paper feeder (3). Adjust the roll guide (2), so that the media roll can rotate.
3. Open the print head assembly (8) by using the print head latch (4).

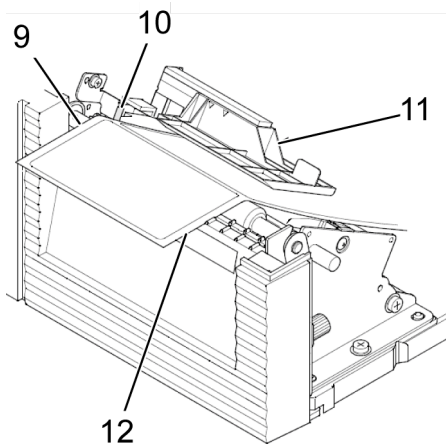


Fig. 8 Inserting media, sensor cover

4. Thread the media under the media damper (5) and the media sensor cover (11), between the platen roller (7) and the print head assembly (8). Align the inside edge of the media (9) with the inside media edge guide (10), so that they touch each other.
5. Loosen the media width guide (6) by turning the knob counter clockwise. Adjust the guide lightly against the outside edge of the media (12). Tighten the guide by turning the knob clockwise.
6. Close the print head assembly.
7. Close the media cover.

### 7.3 Inserting ribbon

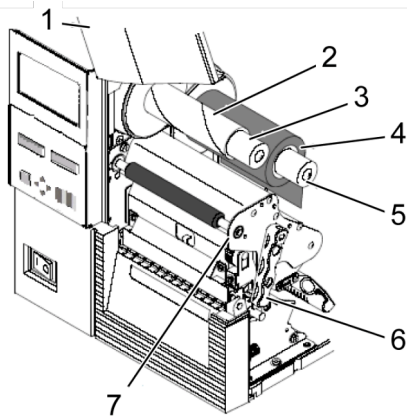


Fig. 9 Inserting ribbon, front

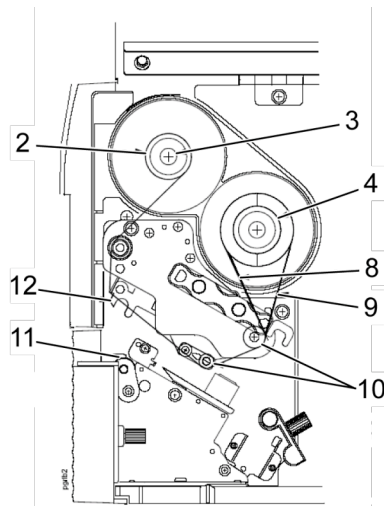


Fig. 10 Inserting ribbon, side

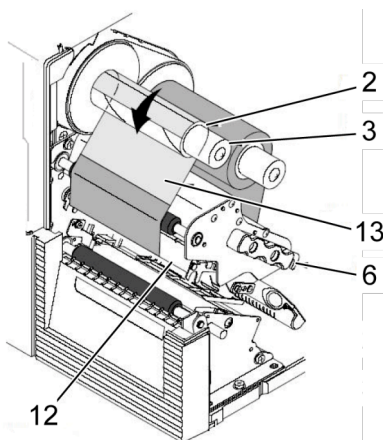


Fig. 11 Inserting ribbon, front

1. Open the media cover (1).
2. Install the ribbon take-up core (2) on the ribbon take-up spindle (3).



#### NOTE!

One ribbon take-up core is delivered with the printer. When operation empties your supply core, use this as your next take-up core.

3. Push the ribbon roll (4) on the ribbon supply spindle (5) against the stopper.
4. Open the print head assembly by using the print head latch (6). The pivoting deck (7) swings upwards.
5. Thread the end of the ribbon (8, alternative 9) under the ribbon guide rollers (10) between the platen (11) and the print head (12).
6. Thread the ribbon between ribbon take-up spindle (3) and ribbon supply spindle. Attach the ribbon to the ribbon take-up core (2) with adhesive tape.



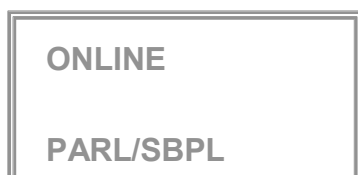
#### NOTE!

Do not attach the ribbon to the ribbon take-up spindle without a ribbon take-up core installed.

7. Manually rotate the ribbon take-up spindle counter clockwise until the ribbon leader (13) has passed the print head (12).
8. Close the print head assembly.
9. Close the media cover.

## 8 Operation

### 8.1 Printing



1. Turn the power on.

The printer starts initializing automatically. It executes an automatic media calibration.

The media calibration can also be operated manually by menu settings.

After the media calibration the printer displays its current state (ONLINE / OFFLINE), interface type and emulation language.

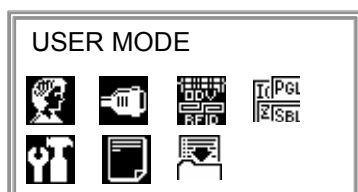
The printer is now ready to receive print job in currently-valid configuration and settings.

### 8.2 Changing settings

You can change the settings of the printer as required by your application.

To enter the printer setting menu:

1. Press "LINE" button to change to "OFFLINE" mode.
2. Press "Function" button.



The printer displays the setting start menu.



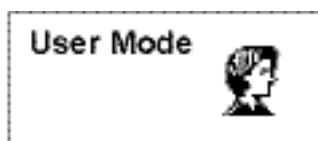
#### NOTE!

Refer to the operator and technical reference manual for detailed menu navigations and meanings of each menu item.

The eight icons of the printer start menu represent eight modes, as follows:

#### User mode:

Setting of various parameters related to basic user settings



### Interface Mode



#### Interface mode:

Configuration of host interface

### Option Mode



#### Option mode:

Setup and status reporting for ODV & RFID encoder (if installed)

### Emulation Mode



#### Emulation mode:

Setting of desired active emulation and various printer operating parameters

### Advanced Mode



#### Advanced mode:

Allows advanced printer operation adjustments

### Diagnostics Mode



#### Diagnostic mode:

Setting of reserved parameters available to field service personnel only

### Config Mode



#### Configuration mode:

Naming, storage and retrieval of up to eight custom printer configurations

### 8.3 Cutting the media

You can separate the labels with the simplified cutter.

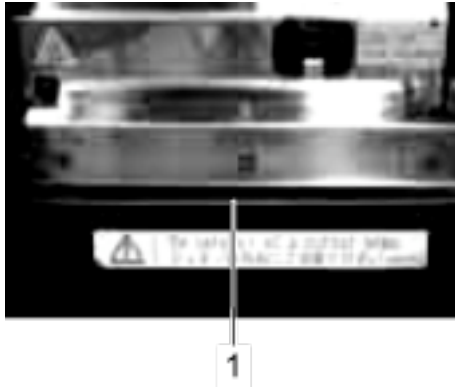


Fig. 12 Simplified cutter



#### CAUTION!

##### Risk of injury at the simplified cutter!

The simplified cutter used to cut the labels may cause cuts and skin abrasions.

Therefore:

- Use caution when handling the simplified cutter.
- When in doubt, wear protective gloves.

- 1 Simplified cutter (tear off blade)

To separate the labels:

1. Print a label.
2. Pull lightly down the label (1), from one media edge to the other.



Fig. 13 Label

## 9 Disposal

Dispose of the device as specified by the appropriate national regulations.

**Caution!**

**Risk of environmental damage in case of inappropriate disposal!**

Electric devices and their accessories are subject to special waste treatment and may only be disposed of by approved specialized waste disposal companies.

### WEEE/RoHS Statement

SATO is committed to being a responsible corporate citizen in the world. We understand the importance of marketing, designing, manufacturing and distributing products that present a low burden to the environment.

Company-wide projects have been undertaken to implement both the Waste Electric and Electronic Equipment (WEEE) and Restriction of Hazardous Substances (RoHS) initiatives.

## 10 Technical data

### 10.1 General information

Models	GL408e / GL412e
--------	-----------------

Item	Value	Unit
Weight (maximum)	14	kg
	30.9	lbs
Depth	455	mm
	19.9	in
Width	271	mm
	10.7	in
Height	305	mm
	12.0	in

### 10.2 Connection values

#### Electrical connection

Item	Value	Unit
Alternating voltage	100-240	V
Frequency	50/60	Hz

### 10.3 Operating conditions

#### Environmental requirements

Item	Value	Unit
Temperature range (operation)	0...+40	°C
	+32...+104	°F
Temperature range (storage)	-20...+40	°C
	0...+140	°F
Relative humidity, non-condensing	30...80	%

## 10.4 Other specifications

### Printing properties

Models	GL408e / GL412e		
Item	Model	Value	Unit
Resolution	GL408e	203	dpi
		8	pt/mm
	GL412e	305	dpi
		12	pt/mm
Item		Value	Unit
Max. media size	Width	128	mm
		5	in
	Roll O.D.	265	mm
		10.4	in
Ribbon size	Length	450	m
		1475	ft
Printing area	Maximum width	104	mm
		4.1	in
Maximum printing speed	Maximum	254	mm/s
		10	ips



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